



MFOQA Demonstration Project

F/A-18C/D Plan

Brief To:
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MFOQA Background

- OSD directive to reduce preventable losses by 50% - MFOQA is a major part of the DON's answer
- DASN(S) & PMA-209
 - ◆ 2 year demo, FY05 - FY06
 - ◆ POM for Acquisition Project FY06 - FY011Target aircraft are:
 - F/A-18C/D - lead platform
 - H-60R/S
 - V-22
 - T-45
- USAF and USA are also conducting MFOQA demo projects



Getting the *MOST* out of the MFOQA Demonstration

- (1) MFOQA is more than just “big brother watching”
→ identify & focus on benefits in:

M*aintenance ...*

O*perations ...*

S*afety ...*

T*raining ...*

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usage analysis, evaluating

identifying precursors

crew feedback

- (2) Get user involved in developing MFOQA CONOPS & requirements in an operational environment key to gaining acceptance by the Fleet
- (3) Address MFOQA acquisition & logistics and MFOQA policy in conjunction with MFOQA technology & requirements



Objectives

Two-year MFOQA Operational Demonstration

- Utilize MFOQA prototypes to develop and refine MFOQA processes and CONOPS in operational setting with operational user participation
 - ◆ goal is to field initial operational capability in 6 months (post mission debrief/analysis – extension of existing efforts)
- Utilize operational data collected & user involvement to support development of:
 - ◆ MFOQA specifications/requirements
 - ◆ MFOQA policies and SOPs
 - ◆ Business case analysis

And to solidify acquisition strategy for out years

***Find out what we don't know
(MFQQA is not FQQA)***



MFOQA Demo Approach

- Use “ACTD-Like” approach to conduct operational demonstration
 - ◆ Spiral development & rapid fielding of 80% solution
 - ◆ Emphasis on *operational* setting and user involvement
 - ◆ Joint Service collaboration (USA, USAF)
 - ◆ Technology/operations/transition & acquisition management addressed
- Conduct multi-phased operational demonstrations tailored to specific aircraft, unit & mission
- Focus on software based approach (avoid installing new hardware if possible)



Components of F/A-18C/D Demo

- Flight Data
 - ◆ Data flow
 - ◆ Data management
- Post-flight animated debrief/event detection
 - ◆ Single aircraft flight event detection
 - ◆ Multiple aircraft, tactical replay and event detection
- MFOQA databases
 - ◆ O-level
 - ◆ Remote level
- Multiple flight trending
 - ◆ Single pilot/aircrew/aircraft
 - ◆ Entire squadron
 - ◆ Maintenance
- Reporting
 - ◆ Different levels/audiences
 - ◆ Single flight/multiple flights
- CONOPS





F/A-18C/D Demo Approach

- Preliminary capability to be tested (PAX)
 - ◆ Post flight animated debrief
 - ◆ Automated data flow
- Initial capability deployed to squadron
 - ◆ Event sets based on eBusiness and USNTPS programs, modified to suit the C/D models and operational needs
 - ◆ Limited reporting
- Assessment of initial capability
 - ◆ Interview the pilots and crews
 - ◆ Observe usage of the system
- Test improved (spiral) capability at PAX
- Spiral capability deployed to squadron
 - ◆ Modifications based on assessment
 - ◆ Added capabilities that may include:
 - Multiple aircraft replay and event detection
 - Multiple flight event detection
 - Trending analyses

database {

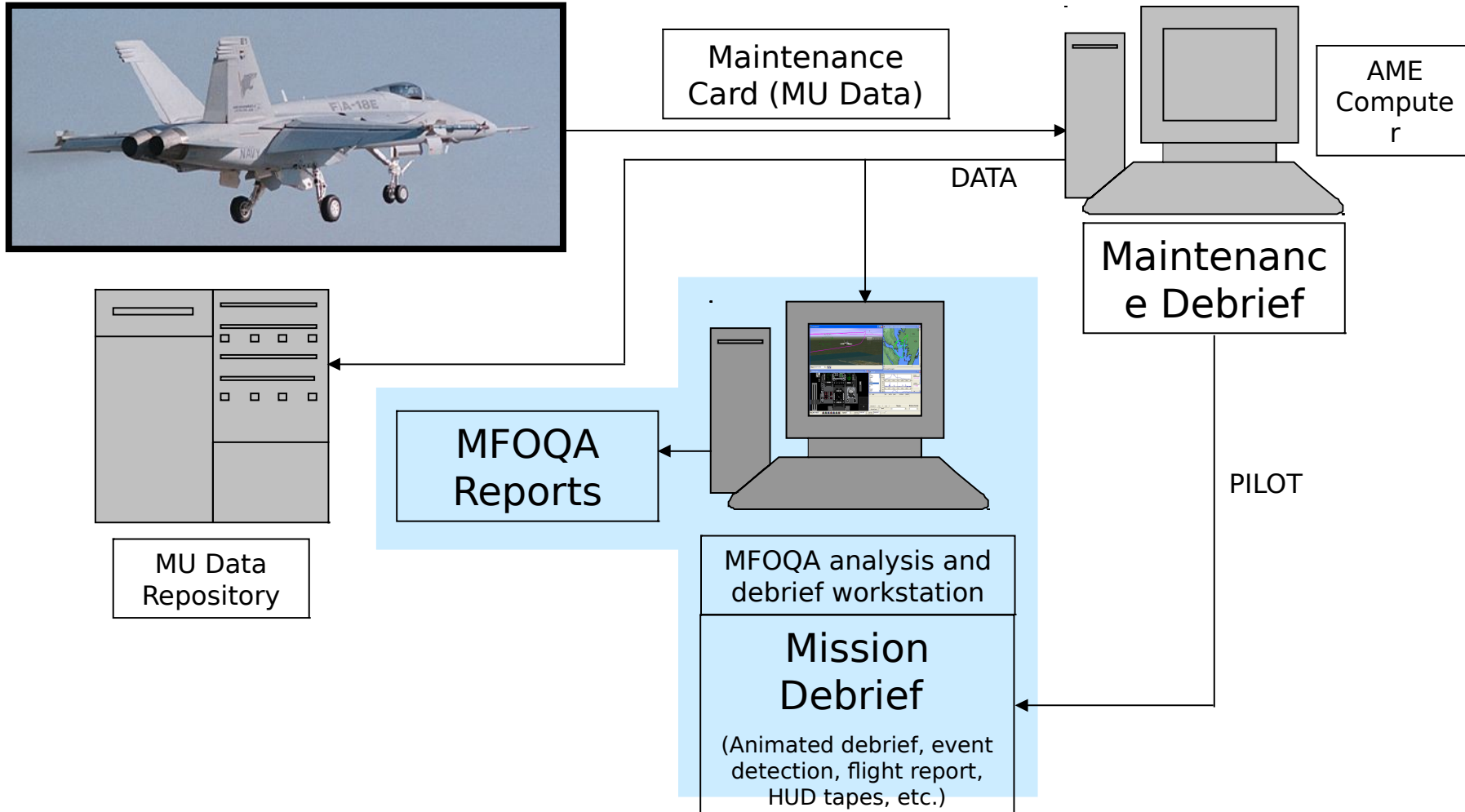
***Demo relies on
processing of MU
files for flight data***

***No aircraft
hardware or
software
modification***



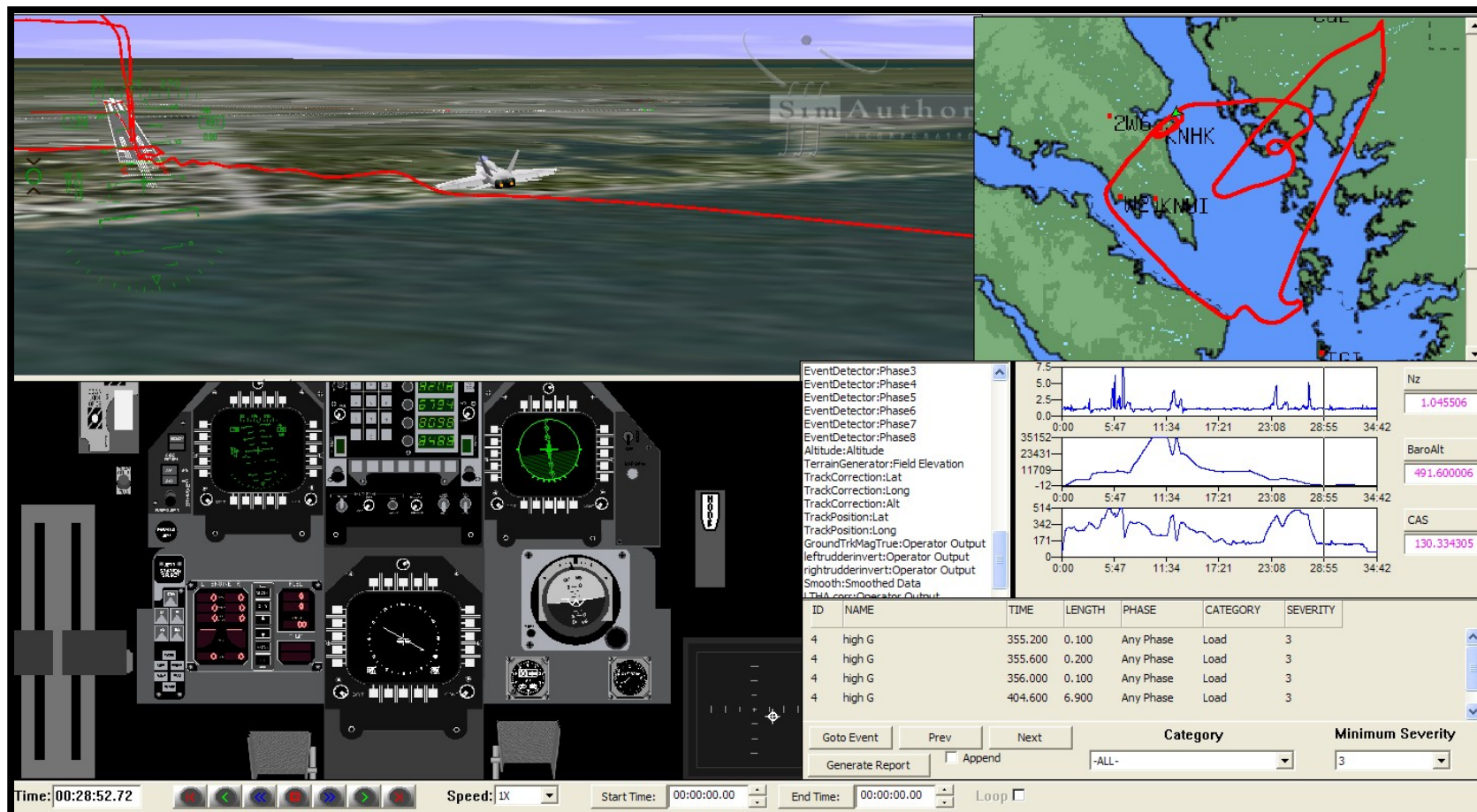


F/A-18 Post Flight With MFOQA Demo





Mission Debrief Tool



F/A-18F (lot 27)

11 August 2004

MU file contains continuous recording of MUTACTS data (code 181) and flight controls data (code 205).

[Replay configuration for a C model]

For Official Use Only

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MFOQA Application:

Operational Monitoring of FLE Sensitive Flight Conditions

FLE Sensitive Flight Condition

Detectable/Reportable during MFOQA Demo

High Speed, Low Altitude	Yes
>350kt and 4G in the overhead break	Yes
Maneuvers >4G with external fuel	Yes
Asymmetric maneuvers	Yes
Low speed, high AOA	Yes
ACM below 10,000' MSL	Yes

The amount and severity of these flight conditions can be monitored and reported after each flight



Maintenance Debrief Screen (Sample)



MU replay tool providing information useful during the maintenance debrief as well as for use by maintenance.



Activities to Date & Current Status

- Project initiated Sep 04
- F/A-18 MFOQA activities
 - ◆ USNTPS (F/A-18B)
 - ◆ eBusiness (F/A-18C)
 - ◆ T&E (VX-23) at PAX providing support
 - MU data obtained for a FCF of an F/A-18F flown at PAX - translated and animated
- Working with ATCS Woell on AME/maintenance aspects of MFOQA
 - ◆ Identified debrief tools to support maintenance
 - ◆ Currently preparing these tools for evaluation
- Working with LCDR Wittwer (Strike Fighter Wing Pacific SO) on Ops/Safety/Training aspects of MFOQA as continuation of AIRPAC MFOQA activities
 - ◆ Provided guidance as to what tools the squadrons will want for ops/safety/training
 - ◆ Currently preparing these tools for evaluation

***Preparing to set up squadron Demo Team
to support demo initiation in Apr/May 05***





Schedule

- MFOQA project initiation Sep 04
- MFOQA Demo Conference Dec 04
- Preliminary capability to be tested Jan/Feb 05
- Standup squadron demo team Apr 05
- Initial capability deployed to squadron Apr/May 05
- Assessment of initial capability Jun 05
- Spiral capability deployed to squadron and continue user evaluation Sep 05 – Sep 06





Summary

- MFOQA Demo will not involve any aircraft software or hardware modifications
- Addressing **M**aintenance, **O**perations, **S**afety, and **T**raining
- Initial baseline capability nearly ready for operational assessment
- Preparing to setup F/A-18C/D MFOQA squadron Demo team